



CPR
unLMTD



Would your students step in?

Rethinking CPR Education in Schools



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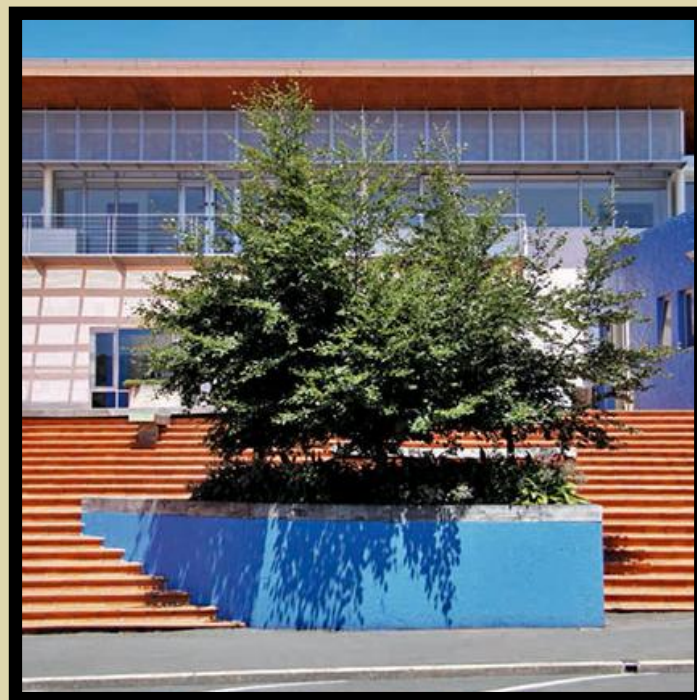


REDINGENHOF



University
of Otago
ŌTĀKOU WHAKAIHU WAKA





THE PATH TO THIS CONVERSATION



THE PATH TO THIS CONVERSATION



highlights the strong
hauora Māori
r programme.
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Hauora Māori
pri: Policy.
as well as a strong
health throughout

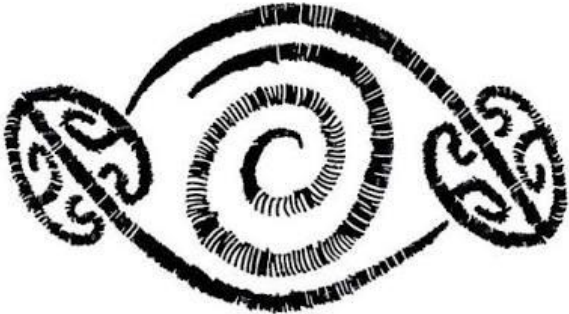
campuses, with a wide range of
expertise, skills and connections.
This offers research opportunities
throughout the country."



Courtney McAlevey
PGCertPH

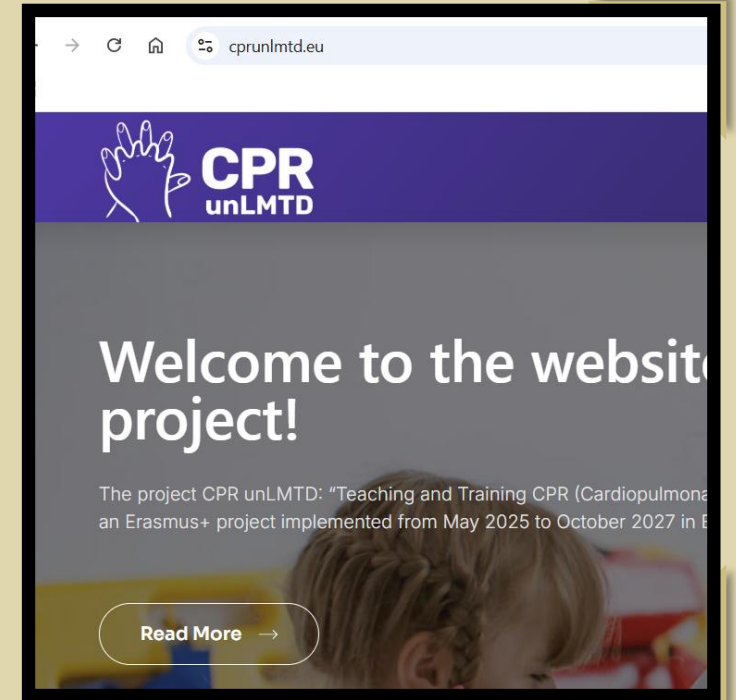
A trained Health and Physical
Education teacher, I returned to New
Zealand after five years abroad to
explore Health Promotion beyond
the classroom. The PGCertPH has
boosted my confidence, supported my

School of Physical Education,
Sport and Exercise Sciences
Te Kura Para-Whakawai



University of Otago
New Zealand
Aotearoa

THE PATH TO THIS CONVERSATION



THE PATH TO THIS CONVERSATION

CPR UnImtd Project



- International Project (Belgium, Poland, Cyprus, Greece, NZ)
- Barriers and Enablers to teaching and learning CPR
- Co-design creating low cost resources for teachers to teach CPR confidently in their classrooms



Focus Groups



Co-Design

What CPR Unlmted is (and isn't)



CPR
unLMTD

NOT

- Certification
- High-stakes assessment



IS

- Confidence-building
- Early exposure
- Repeated practice in schools



Session Overview (part 1)



- ❖ The CPR landscape in Aotearoa.
- ❖ What do the guidelines actually say?
- ❖ What are teachers and students telling us?
 - Preliminary findings from our international CPR UnlmtD Project.
- ❖ Can DIY Mankins help remove barriers?
- ❖ What could CPR education look like in your schools?

Session Overview (part 2)



- ❖ Build and trial DIY Manikins
- ❖ Compare with high fidelity manikins
- ❖ Reflect on what this might look like in your kura
 - Potential barriers and enablers



Current CPR Education Landscape in Aotearoa



Governing
Bodies



Providers



NZ Curriculum/
Government

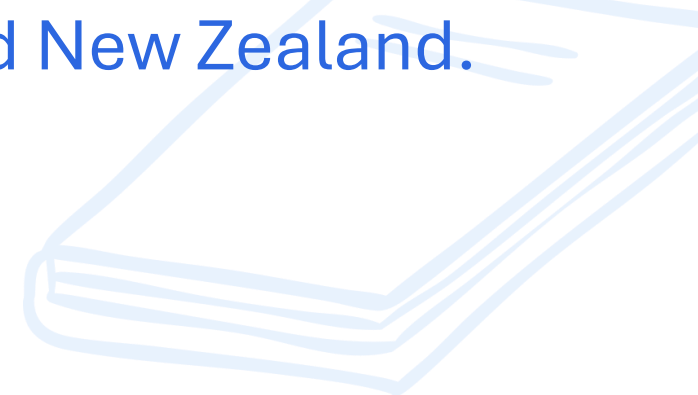
Governing Bodies



- International Liaison Committee on Resuscitation (**ILCOR**)
 - Global collaboration of resuscitation councils.
 - Ensures CPR training is accurate, consistent, and up to date.



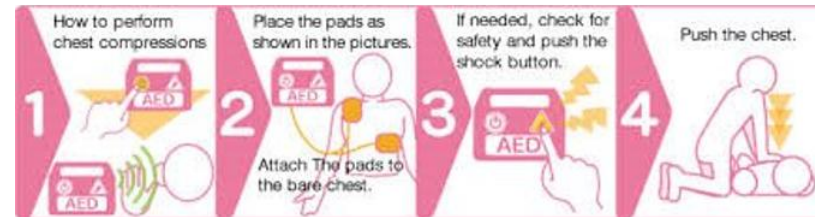
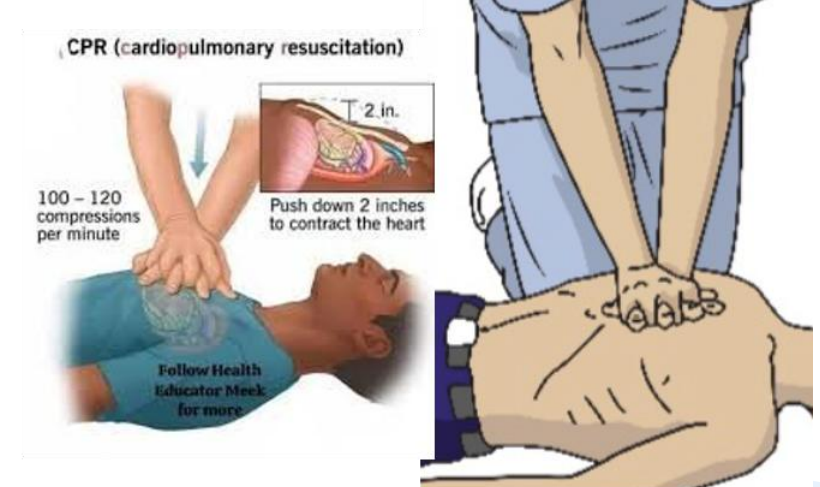
- Australia and New Zealand Committee on Resuscitation (**ANZCOR**)
 - Determines and defines the science and best-practice protocols for CPR across Australia and New Zealand.



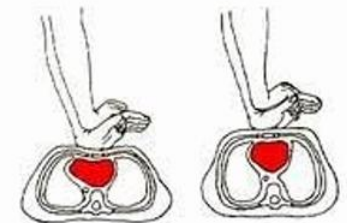
So what do the guidelines say?



- Core CPR principles (simplified)
 - Hand position
 - Push hard and fast (100-120 compressions/min)
 - Compress adequate depth (~5-6cm in adults)
 - Allow full chest recoil
 - Minimise interruptions
 - Early use of AED



Adequate chest recoil is critical for high-quality CPR



So what do the guidelines say?



- **Training implications**

- Hands-on practice is essential
- Feedback improves skill quality (depth, rate, recoil)
- Training should be accessible and scalable
- Simplified approaches (e.g. compression-only CPR) are effective for the lay public



Why CPR matters – NZ context



- The most common place for an Out-of-Hospital Cardiac Arrest (OHCA) is in a person's home (72%) followed by public area (15%) – including workplaces.
- 83% of witnessed OHCA received bystander CPR

Hato Hone St John. (2025). *Out-of-hospital cardiac arrest (OHCA) Aotearoa New Zealand annual report 2024/25*. <https://www.stjohn.org.nz>

Kids Save Lives

Global call, launched by ERC/ILCOR and endorsed by the WHO...

“Children from the age of 12 should receive 2 hours of CPR training per year”



<https://www.resus.org.nz/kids-save-lives>

Focus Groups – preliminary



Teachers (8)

- Believe teaching CPR in schools is important (despite not being in the NZC).
- Confidence was a barrier.



Students (12)

- Want to feel confident that they can help.
- Make it interactive.
- Make it relevant for me.



DIY Manikins: what are they?



What do the experts say?

Semi-structured Interviews

International experts from four key areas:

- Medical (M) (6)
- Pedagogical /schools (P) (5)
- CPR instructors (C) (10)
- Socio-cultural/public health experts (S) (3)

Interview questions focused on:

- the effectiveness of DIY manikins
- concerns regarding their applicability
- potential improvements to enhance efficacy

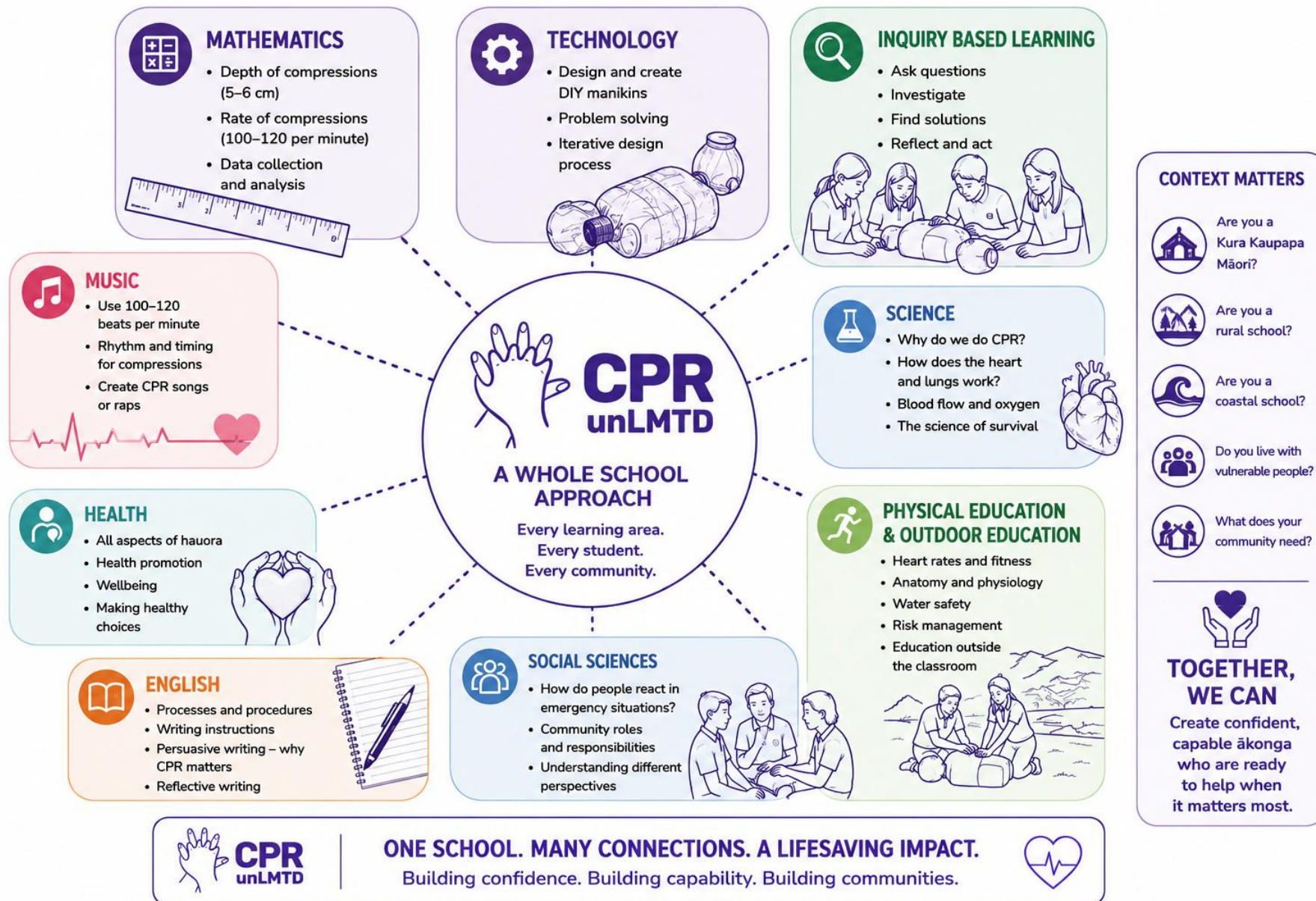


What do the experts say?



The viability of DIY manikins	Potential benefits	Challenges/Concerns
“I still think they need good trainers; they need good people to be able to explain that process really well” (C1). “Even a single life saved is a life saved...obviously they're not going to be able to deliver a standard of care that a paramedic would be able to do, but just allowing for that extra time for somebody to arrive with more experience or an ambulance.” (S1)	“If they [students] have to put it together themselves, you really start thinking about what you're doing and why you're doing it and how this compares to a real body, a real person. So, there's this added bonus of reflection and technical insight, which I don't think you necessarily get from a standard training with a non-DIY manikin.” (C9)	“It's not an actual effective representation of CPR on a real person” (C8). “If you're just pushing down on something that has no recoil, there's a danger that people will think you just keep pushing down...So you'll get people pushing down on a real person and not allowing any recoil.” (C3)

A whole school approach



Did something Resonate?



Stay connected!

 Get in touch – courtney.mcalevey@otago.ac.nz

- Share ideas and feedback with us.
- Would you like to keep updated with the project?
- Let us know if you try DIY manikins in your school.
 - <https://mymanikins.info/> (for DIY Manikin Resources)
- We'd love to see photos and hear your stories.

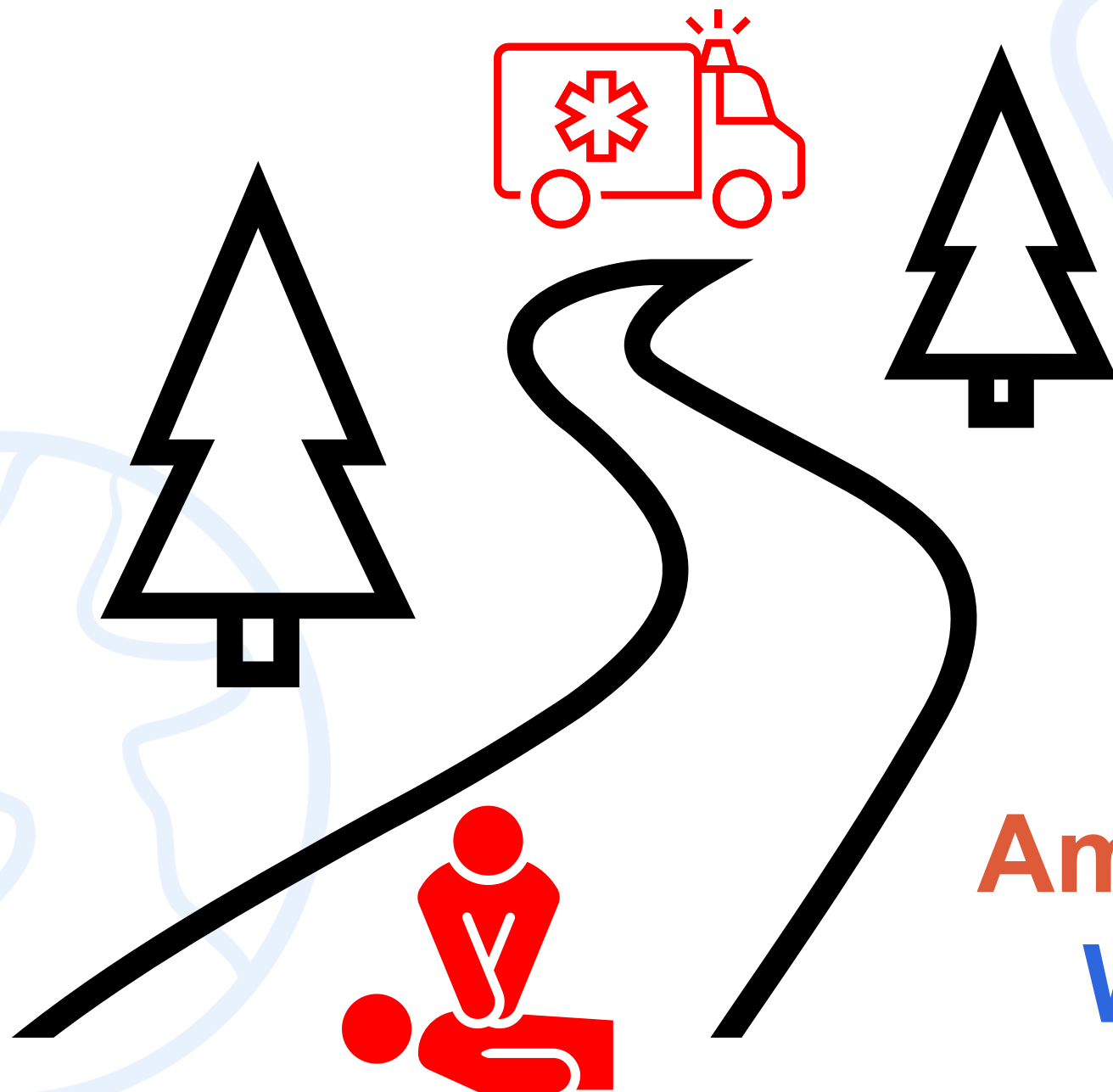
 Visit our website and follow socials - <https://cprunlmted.eu/>

Session Overview (part 2)



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Ambulance Race!!!
Who vs Who??

Wanner's homemade CPR trainer



Step 1: Thread a t-shirt through a toilet roll



Step 2: Wrap a folded towel around the toilet roll – aim for the realistic thickness of a torso.



Step 3: Practice compression – only CPR!



- Instruction video: <https://www.youtube.com/watch?v=0-7EUhtXLRY&t=144s>
- Scientific study: Wanner GK, Osborne A, Greene CH. Brief compression-only cardiopulmonary resuscitation training video and simulation with homemade mannequin improves CPR skills. BMC Emerg Med. 2016;16(1):4–9.

Ohle's homemade CPR trainer



Step 1: Get two toilet rolls and a jar lid that has an air bubble.



Step 2: Stack the toilet rolls on top of the jar lid (air bubble on top).



Step 3: Practice compressions – the lid should click with each push & recoil



Further instructions & Scientific study:

Ohle R, Moskalyk M, Boissonneault E, Bilgasem A, Tissot E, McIsaac S. Is a homemade cardiopulmonary resuscitation (CPR) trainer non-inferior to a commercially available CPR mannequin in teaching high-quality CPR? A non-inferiority randomized control trial. Resusc Plus. 2021;6(February 2021):100134.

Do Your Own Manikin At Home

You will need

1 T-Shirt, 1.5-Liter Plastic Bottle, 3 Rubber Bands and some type of filler (newspaper, paper or plastic bags)



Step 1

Ensure that the 1.5-liter bottle is completely empty with its cap screwed on tightly.



Step 2

Take your t-shirt and tie a rubber band around each of the two arms and the bottom of the shirt.



Step 3

Insert the 2-liter bottle into the shirt in the center of the where a person's chest would be on their breastbone.



Step 4

Take your filler and insert it into the shirt around the bottle, ensuring that the bottle stays aligned down the front center of the shirt.



learn more at Global First Aid Reference Centre

Knowing and practicing how to correctly perform chest compressions is necessary for any CPR provider. You can now create your own CPR manikin using items you may already have laying around your house!

Contact your local RC/RC for available courses



First Aid
Reference
Centre

Instruction video: <https://www.youtube.com/watch?v=Wi6SzaIHnis>

Scientific studies:

Piscopo A, Piscopo IC, Fonseca FA, Pinto IM, Saraiva FK, Avezum A. PO378 Cardiopulmonary Resuscitation (CPR) Mass Training for High School Children in Public Schools in São Paulo – Brazil – Using PET Bottle Mannequins and Recycled Material. Glob Heart. 2018;13(4):458–9.

Piscopo A, Piscopo ICC, Avezum A, I.M. P, Saraiva FKK. New mannequin made by recyclable plastic bottles for training thoracic compressions at schools. Circulation. 2018;138(2018 PG-2021–2021):2021.

Some more examples from schools...



“LOCOMAN” (Low-Cost-Manikin) by Barcala et al.

For more details, see their paper:

<https://link.springer.com/article/10.1007/s00431-024-05601-8>

Peixoto-Pino, L., Isasi, S. M., Agra, M. O., Van Duijn, T., Rico-Díaz, J., Núñez, A. R., & Furelos, R. B. (2024). Assessing the quality of chest compressions with a DIY low-cost manikin (LoCoMan) versus a standard manikin: a quasi-experimental study in primary education. *European journal of pediatrics*, 183(8), 3337-3346.



More resources



Scoping review with a comprehensive list of all blog posts, youtube videos, manikin types and published papers

<https://doi.org/10.25894/ijfae.2306>

Interactive platform for ongoing exchange – share your experiences and read from others! Contains a blog and a manikin inventory.

<https://mymanikins.info/>



Author/Organization	Country & Resource setting	Media Type	Peer Reviewed	Type of Inquiry	Instruction for Building	Compression Device	Container	Filling
Bonizzio et al. (2019)	Brazil HRS	Academic	P	Observational	Y	PET Bottle	Clothing	Non-fabric
Brush up on EMS (2020)	USA LRS	Video	–	Opinion	Y	Pillow and PET Bottle	Clothing	Fabric
Brush up on EMS (2020)	USA LRS	Video	–	Opinion	Y	Pillow and PET Bottle	Clothing	Fabric



Ngā mihi nui